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# Chronic CAD/Stable Ischemic Heart Disease

## DO BEHAVIORAL RISK FACTORS EXPLAIN THE ASSOCIATION BETWEEN DEPRESSIVE SYMPTOMS AND CARDIOVASCULAR RISK IN INDIVIDUALS WITH CORONARY HEART DISEASE? REPORT FROM THE REASONS FOR GEOGRAPHIC AND RACIAL DIFFERENCES IN STROKE (REGARDS) STUDY

ACC Oral Contributions

McCormick Place North, N227b

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Session Title: Sex, Scoring, Sadness, Statins, Stents and Surgery

Abstract Category: 2. Chronic CAD/Stable Ischemic Heart Disease: Clinical

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**Background:** Depressive symptoms are associated with increased morbidity and mortality in individuals with coronary heart disease (CHD). The role of behavioral risk factors (BRFs) in this relationship is not clear.

**Methods:** Of the 30,239 REGARDS cohort participants, 4,676 had CHD at baseline and constituted the study sample. Scores  $\geq 4$  on the 4-item Center for Epidemiologic Studies Depression Scale indicated depressive symptoms. Incremental proportional hazards models were used to assess associations between depressive symptoms and definite/probable MI or death, adding disease-specific then BRFs to a model that included socio-demographic covariates and body mass index.

**Results:** At baseline, 638 (13.6%) individuals in the study sample had depressive symptoms. Over a mean 3.5 years of follow up, 125 of 638 (19.6%) participants with depressive symptoms and 657 of 4038 (16.3%) participants without had events. Depressive symptoms were associated with higher risk of events (hazard ratio [HR] 1.41 [95% CI 1.15-1.72]), but the increased risk was attenuated after BRFs were entered into the model (HR 1.17 [95% CI 0.96-1.43]) (see Table). Smoking (-17.6%) and physical inactivity (-21.1%) contributed the most to attenuating the associations.

**Conclusion:** Higher risk for MI or death among individuals with depressive symptoms was partly explained by BRFs, especially smoking and physical inactivity. Our findings have implications for behavioral interventions in individuals with CHD and depressive symptoms.

Table Association between depressive symptoms (Center for Epidemiologic Studies Depression Scale of  $\leq 4$  vs  $> 4$ ) and clinical events (definite or probable MI or all-cause death). Models also included adjustment for geographic region of residence. \* not included in regression model

	Model 1	Model 2	Model 3
Depressive symptoms	1.41 (1.15 - 1.72)	1.29 (1.06 - 1.58)	1.17 (0.96 - 1.43)
Age, per 10 years	1.52 (1.39 - 1.65)	1.51 (1.39 - 1.65)	1.63 (1.49 - 1.79)
Male	1.44 (1.22 - 1.69)	1.43 (1.22 - 1.69)	1.52 (1.29 - 1.80)
Black	1.11 (0.94 - 1.30)	0.98 (0.83 - 1.15)	0.95 (0.81 - 1.12)
High school graduate	0.87 (0.73 - 1.05)	0.94 (0.78 - 1.12)	0.97 (0.80 - 1.16)
Annual household income $< \$20K$	1.53 (1.28 - 1.83)	1.44 (1.21 - 1.72)	1.30 (1.08 - 1.55)
Body mass index, per 5 kg/m <sup>2</sup>	0.94 (0.88 - 1.01)	0.89 (0.83 - 0.96)	0.91 (0.85 - 0.97)
Hypertension	*	1.20 (1.00 - 1.44)	1.21 (1.01 - 1.45)
Myocardial infarction	*	1.35 (1.14 - 1.60)	1.31 (1.11 - 1.55)
Stroke	*	1.45 (1.20 - 1.74)	1.35 (1.12 - 1.63)
Diabetes Mellitus	*	1.59 (1.37 - 1.86)	1.56 (1.33 - 1.81)
Aspirin	*	0.89 (0.76 - 1.05)	0.89 (0.76 - 1.04)
Beta blocker	*	1.18 (1.02 - 1.37)	1.17 (1.01 - 1.36)
Thienopyridine	*	1.36 (1.13 - 1.64)	1.36 (1.13 - 1.64)
ACE-inhibitor / angiotensin receptor blocker	*	1.05 (0.90 - 1.22)	1.06 (0.91 - 1.23)
Statin	*	0.73 (0.63 - 0.85)	0.75 (0.64 - 0.87)
Alcohol use			1 (ref)
None			0.92 (0.78 - 1.09)
Light to moderate	*	*	0.69 (0.43 - 1.10)
High			
Current Smoking	*	*	2.07 (1.72 - 2.49)
Physical activity			1 (ref)
None			0.68 (0.57 - 0.81)
1 - 3 times per week	*	*	0.67 (0.56 - 0.81)
$\geq 4$ times per week			
Morisky scale for medication adherence			1 (ref)
0			1.15 (0.98 - 1.36)
1	*	*	1.24 (0.91 - 1.69)
2			0.80 (0.51 - 1.25)
3 or 4			